

**Claims**

1. Method for monitoring the performance of an antenna device comprising the steps of:
  - measuring from time to time the performance of the antenna device for achieving performance samples with  $1 \leq i \leq n$ ,
  - watching the variation of said performance samples over the time; and
  - detecting a deterioration in the performance of the antenna device depending on the amount of said variation.
2. Method according to claim 1 wherein the step of watching the variation comprises the steps of:
  - storing at least two of said performance samples  $p_i$ ; and
  - calculating the variation of two of said performance samples  $p_i$  by calculating the difference thereof.
3. Method of claim 2, wherein one of said two performance samples is an initial performance sample measured immediately after a proper installation of the antenna device or a previous performance sample measured before a last calculating step.
4. Method according to claim 3, wherein a first one of said performance samples is the previous performance sample and the second one of said performance samples is a new performance sample measured during a last measurement.

5. Method according to claim 4, wherein in the case that the difference between the previous and the new performance sample exceeds a predetermined first threshold value the deterioration in the performance of the antenna device is detected and a first type of alarm is generated.
6. Method according to claim 3, wherein a first one of said performance samples is the initial performance sample and a second one of said performance samples is a new performance sample measured during a last measurement.
7. Method according to claim 6, wherein in the case that the difference between the new and the initial performance sample exceeds a predetermined second threshold value the deterioration in the performance of the antenna device is detected and a second type of alarm is generated.
8. Method according to one of the preceding claims, wherein in the case that the antenna device is a radio receiver the performance samples represent a received signal quality parameter, preferably the "received signal strength indication" RSSI-parameter.
9. Method according to one of the preceding claims, wherein in the case that the antenna device is a radio transmitter the performance samples represent a transmitted signal quality parameter, preferably the "Voltage Wave Standing Ratio" VSWR-parameter.
10. Monitoring means for monitoring the performance of an antenna device, comprising
  - a measuring means for measuring from time to time

the performance of the antenna device for achieving performance samples  $p_i$  with  $1 \leq i \leq n$ ;

- a watching means for watching the variation of said performance samples  $p_i$  over the time; and
- a detecting means for detecting a deterioration in the performance of the antenna device depending on the amount of said variation.

11. Monitoring means according to claim 10, wherein the watching means comprises

- a storage means for storing at least two of said performance samples; and
- a calculating means for calculating the variation of two of said performance samples by calculating the difference thereof.

12. Monitoring means according to claim 10 or 11, wherein the detecting means comprises a comparator means for comparing said differences with a predetermined threshold value.

13. Radio base station having a transmitter and/or receiver each being connected to an antenna device and having a monitoring means according to one of claims 9 - 11.

14. Mobile radio system comprising:  
a plurality of radio base stations each having a transmitter and/or a receiver each of which being connected to an antenna device and each base station having a measuring means for measuring from time to time the performance of the antenna device for achieving performance samples  $p_i$ , a storage means for

storing at least two of said performance samples; and sample transmitting means for transmitting said performance samples or differences of two of said performance samples to a remote evaluation unit; and at least one control station for controlling the operation of said base stations; said control station comprising an evaluation unit for receiving said performance samples  $p_i$  or differences thereof with the help of a receiving unit from the sample transmitting means of the base stations and for evaluating said performance samples or said differences thereof in order to detect a deterioration of the performance of the antenna devices of the base stations.

15. Mobile radio system according to claim 14, wherein the evaluation unit is embodied to calculate the difference between two received performance samples  $p_i$  if said difference has not already been calculated in the base station and to generate an alarm in the case that the difference between two performance samples exceeds a predetermined threshold value.